T H E S I S

o n

RAYNAUD'S DISEASE WITH NOTES OF CASES.

b y

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Raynauds disease, in its milder aspects, at least, is not so uncommon as is generally supposed. In our out-patient department of about 2000 per annum we have come across, during the last six months about 40 cases with well marked Raynauds phenomena. These have been mainly of the syncopal & asphyxial types.

HISTORICAL

This condition was first described by Maurice Raynaud in 1862, though long before that time there were records of cases exhibiting those phenomena but which were ascribed to other conditions & Raynaud in his thesis has reported most of them.

Although Dr. Southey was the first in this country to describe a case, Dr. now Sir Thomas Barlow of London deserves the credit of bringing the condition to our immediate eyes by his translation of Raynaud's thesis & New Researches in 1888.

AETIOLOGY.

Sex. Most observers, Raynaud included, have found that females are more liable to attacks than males. In France 8 out of 9 cases were females. Considering the fact that hysteria is very common in French women, a functional neurosis may explain it.

In our cases here at least ¾ were females, & most of those had a neurotic history.

AGE

The age varies considerably. Commonest perhaps between 30 & 35. Cases have been reported at the extremes of life.

HEREDITY.

This is undoubtedly a predisposing cause. Cases where

brother & sister; father & son; have been attacked have been reported & here we have seen cases where different members in one family have been affected.

COLD.

This is probably the most common exciting cause & in some instances is the starting point of the disease. Several cases have come under our observation here where the condition dates from some prolonged exposure & in this respect we find that occupations, which render people liable to constant exposure, are predisposing conditions. We had two cases in hospital here at the same time, both were stone masons the first attacks coming on when they were preparing stones with steel chisels, they both gave the same account of the onset. "My hands went suddenly cold & numb & I could not hold my tools".

CASE.1. At present we have under observation a nurse who has only to wash her hands in cold water to bring on an attack of syncope & I have often seen her during one of these attacks stick a needle into her finger without causing pain or drawing blood. She is at once relieved by putting her hands into very hot water. Her condition dates back some seven years & the onset was very gradual. Her hands became first affected, followed soon after by her feet & for years she wore boots lined with fur etc but with no good result. At times when walking she could not feel the ground beneath her.

She never thought anything of her condition, although it was very unpleasant, until she heard one of the cases in the ward being described, when she shewed me her fingers. She presented all the features of Raynauds disease, her fingers up to the metacarpo phalangeal joints becoming dead white with loss of all sensation. Her toes were in the same condition.

Her heart was normal- Radial pulse good; no degeneration of arterial walls. Urine normal.

The most interesting feature in her case & one which drew our attention to other cases was marked exophthalmos, with some slight fulness of the thyroid gland. This exophthalmos was not ~~due to~~ accompanied by any defect in vision.

She volunteered the information that she was much less liable to attacks when she was feeling well & she said that the number & severity of the attacks, about 4 or 5 a day, was due to her being run down after a long spell of night duty.

She has certainly improved under tonics & supra-renal extract & has now perhaps one attack in 3 days.

Sunstroke & Lightning have never, as far as I can find, been given as causes of this condition but we have had a case of each here.

CASE II. J.B. a soldier was admitted complaining of cold hands & feet.

HISTORY.

Patient has been seven years in the army & was on the reserves when called to South Africa last year. Was well all the time he served. No specific history.

Patient was on the march to Waterval on a very hot day in August. He fell down with sunstroke & lay unconscious for 12 hours. When he recovered he found he could not use his left arm or leg & was aphasic & had very severe pain in his head, mostly on the left side. He was kept in Pretoria Hospital for 16 days & then removed to Bloomfontein where he gradually got the use of his limbs back & was able to speak. When there he noticed that his fingers went dead white & he could not feel any-

thing with them & he drew the attention of the hospital Dr. to them. The whole of the little finger on both hands & the two terminal phalanges on all the others, save the thumb became affected. His toes became affected soon after but they have never been so bad as his fingers, though at nights in bed they caused him great pain & felt as if they were being burnt.

ON ADMISSION.

Patient is a big strong man with rather a sad expression. Walks with slight hemiplegic gait.

Heart is slightly enlarged. Vessel walls good - Tension of pulse rather low. He has slight loss of power on left side. With dynamometer the left hand is 30 points weaker than right. Reflexes are all normal. Speech normal.

No abnormal constituent of urine.

He has had one or two attacks of syncope in his fingers since admission but his feet were more of the asphyxial type, the toes becoming very congested & throbbing, with profuse sweatings. His ears were at times very cold & often simultaneously with hands.

No headaches since admission.

CASE III

E.A. aged 22 came to the out-patient department with his wife, having had a fit outside his house. His chief complaint was severe pain below the umbilicus with severe diarrhoea & in addition complained of coldness of the extremities from the tips of his fingers to his elbows & from his toes to his knees.

HISTORY

Patient was struck by lightning two years ago & was unconscious for about 3 hours. When he recovered he found that his sight had almost gone & it remained very bad for about 3 weeks. Since then the sight has slightly improved but he has had very severe attacks of migraine - severe pain in head & stomach, the

latter always relieved by vomiting.- the vomit almost entirely bile & mucus. Since he was struck he has been subject to cold extremities & has had 3 epileptic seizures; two of them having occurred the week previous to his admission. He has also been subject to epistaxis .

PRESENT CONDITION

Patient is a fairly well nourished man with typically sad expression.

He has occasional attacks of pain in his head & stomach, the latter sometimes increased sometimes improved by the ingestion of food, & always relieved by vomiting which he did about twice a day. No abdominal tenderness. Heart normal; some palpitation at night & easily brought on by any excitement. Vessels normal. His hands & feet were as a rule warm but on occasions he had severe syncopal attacks & had to have hot bottles to his feet. The attacks lasted usually about ½ hour & were very painful especially in the feet. The pains in the head were often simultaneous with those in the feet though this was not always the case.

No Haemoglobinuria.

This patient was under observation here for two months as an inpatient & his condition did not improve much under treatment. The case was looked upon more as one of a general vasomotor disturbance than of pure Raynaud's disease, & this was borne out later on by the fact that he developed severe general sweatings as are common in exophthalmic goitre. Nitro glycerine nearly always cut short the attacks of migraine but it eventually lost its effect.

His eyes were examined & there was nothing except some slight fullness of the veins. His vision was less than 6/60 in

right eye & $^{6}/_{60}$ in left, due to mixed astigmatism. Glasses were prescribed but since he has got them we have lost sight of him so whether they improved his headache or not we cannot say.

Numerous other causes have been advanced- fright, worry etc. & cases have been reported following the specific fevers, rheumatism chronic brights etc. Its relation to malaria & menstrual disorders has been well shewn by Munro in his monograph on the subject.

The phenomena of Raynaud's disease have been described in some of the forms of peripheral neuritis, e.g. alcohol lead, & as the vasomotor nerves pass to the arterioles in the peripheral nerves it is easy to see how they also can be affected.

Handford in the transactions of the Clinical Society published a case of alcoholic neuritis with pigmentation in which gangrene took place & in this respect the following case is of interest, shewing vasomotor symptoms in arsenical neuritis.

CASE IV.

H.W. aged 55, admitted complaining of the ends of his fingers & toes being dead.

Patient is a cooper in a brewery & has been allowed for the last 4 months two pints of beer a day. Previous to that he worked for 15 months in another brewery where the beer has since been found to contain arsenic & there he drank three pints per day. During the two months previous to his admission he noticed that he was gradually losing the tactile sense in his fingers & could not hold his rivets. He did the best he could but his condition got much worse & at times his fingers became quite white up to first interphalangeal joint. The attacks lasted from 10 minutes to $\frac{1}{2}$ hour & were succeeded by severe throbbing pains.

During cold weather he has had to get out of bed at night to warm his fingers at the fire. The pain was very severe & he volunteers the statement that he could stick pins into them with out any pain.

He has had severe attacks of pain in his toes which shot up the legs & in severe attacks he could not put his feet under him on account of the pain in the toes & calves. When his hands & feet were very cold he says he could not see to read. At other times his vision was very good. The ingestion of food often seemed to relieve him.

ON ADMISSION.

Patient has rather an alcoholic appearance.
The skin of body is very mottled & there are patches of coppery pigmentation on the chest, abdomen, under both axillae & on both thighs. This pigmentation appeared first about two months ago & has increased since.
Skin of fingers has a very glossy appearance & looks cleaner than the skin on other parts of body. When the fingers are attacked the cold white appearance extends to 2nd inter-phalangeal joint & during attack the fingers are stiff & all tactile sense is gone. Toes have never suffered from an attack in hospital as patient has been kept in bed & feet well covered.

• There is very marked hyperaesthesia of calf muscles, the patient jumping whenever they are touched. No wasting. Knee jerks are normal, no ankle clonus; slight foot drop & his gait is unsteady. His eyes have been examined during an attack of pain in fingers & the following is the report.
Left eye.

The Temporal half of eye very pale. Arteries are considerably constricted, their lumen being about ¼ that of veins. Small

branches are mere threads.

Veins are full & tortuous.

Right eye in same condition.

Field of vision fairly normal.

SYMPTOMS.

I do not intend to go fully into the symptoms of the disease but rather to illustrate them with some cases which I have had the pleasure of seeing.

SYNCOPE.

The condition of syncope is best described as "Dead fingers" The patient notices first that his fingers are becoming stiff & he has great difficulty in performing delicate operations, such as buttoning his collar etc.

The attacks come on simultaneously in both hands, though this is not always the case. The cases vary very greatly in their distribution both hands & feet may be affected at the same time or it may be only one finger & one toe on each foot. The thumb is rarely affected. The length of time of attack also varies greatly & the attack usually ends when the exciting cause is removed. During the attack of syncope the patient usually loses the tactile sense & sense of pain. The affected parts are cold to the touch. As the attack passes off, with the re-establishment of the circulation, the fingers, though this is not always the case, begin to throb & in many cases actual pain is complained of. If the blood rushes back quickly the venules become pressed upon & an active congestion results with perspiration of the part. In addition the nose & ears are sometimes affected.

CASE V. G. R. admitted complaining of Bronchitis. For 5 or 6 years has suffered from cold hands & feet. At nights in bed he has often wakened with coldness of his feet. He first noticed his hands getting cold when at his work, that of a stone mason; & he could not

hold his chisel. In cold weather he would have to go to the fire before he could continue his work & this occurred as often as 12 times a day. The four fingers of each hand became dead white & numb & when warmth was applied they became red & tingled. The coldness sometimes spread to his wrists. His feet became affected soon after his hands but they never became white, but felt very cold. At this time he also suffered from severe frontal headaches. Both ears became white often at the same time as the hands.

He has also had abdominal pains in the region of the epigastrium, as often as 3 times a day, lasting from 5 to 15 minutes, which were always relieved by drinking something hot. The pains were so severe that he "thought he had cold in his bowels" Heart troubles have not been marked - Has had some attacks of dyspnoea on exertion.

No palpitation.

His family history is good.

Present condition.

Patient has a very sad expression, fingers of both hands are always cold to the touch & during an attack go quite white, the whiteness in time giving place to redness. The Right terminal joints are very stiff & slightly ankylosed. , The right fingers are thicker than the left, the latter being thin & tapering to the points. The nails on both hands are very brittle & thin.

The feet have rather a different character from the hands. The skin on dorsum of both feet is of a mottled blue colour. The first phalanx is hyperextended & the two terminal phalanges are flexed. Sensation is normal. Marked ankle clonus on left foot, other reflexes are normal.

The pinna of the right ear is very much thickened & this ear

has always been the coldest, the left is less thickened but still it is hypertrophied.
Heart dullness is at nipple line. Vessel walls a little thickened. Urine normal.

This case improved considerably under treatment but when seen in the outpatient department last week after having been discharged for a month he was much worse again. Both hands were deeply congested & very blue & there were appearances of trophic changes on skin of finger pulps . The condition evidently becoming more of the asphyxial type.

ASPHYXIAL TYPE.

The second stage of the disease was called by Raynaud Local Asphyxia, but a more descriptive name is that of Local Cyanosis given by Sir. Thomas Barlow. The condition is brought about by the same causes as produce syncope & often follows on it. Local asphyxia often occures quite independently of syncope & in some rare cases syncope follows asphyxia.
The colour of the parts vary from a dusky to a dark blue. The parts affected are nearly always in a state of perspiration, due probably to increased pabulum. This sweating was very marked in one or two of our cases & was entirely local. The actual pain is much more severe than in syncope & when parts are handled the patient winces. When the feet are affected this pain interferes with locomotion.

The same parts are affected as in syncope, the lips never become blue, as Raynaud pointed out, & this is a good point for differential diagnosis from cardiac disease.

The fingers in this stage often shew trophic changes. They

become tapering & have glazed appearance & the nails tend to crack & turn up at the points.

CASE VI.

with photo.

T.F. aged 42 admitted complaining of numbness of his feet & hands. He had been able to work until 7 weeks before admission when he had to give it up because he could not hold his chisel. When exposed his hands became of a bluish red colour & tingled. In the morning he said his fingers were as cold as ice & caused him great pain until he applied warmth.

His feet became affected at the same time, the left foot being first affected & always the more severe. They became dark red to the ankle joint (the line of demarcation being quite distinct) & sweated profusely. They were exceedingly tender & when patient walked he limped very badly especially with his left foot on account of pain it caused when his foot was put down. The first phalanx was hyperextended, & the two last phalanges were flexed as in case V. Reflexes were normal.

His ears & nose never were affected.

He has been subject to severe frontal headaches.

Present condition.

Patient has sad expression. The skin of his fingers is very glossy, & mottled & the fingers are stiff & partially flexed. Nails shew no changes. During an attack the fingers become red & feel hot but dont sweat.

His feet are very red & swollen his toes have the appearance of chilblains but he has never suffered ~~with~~ from the latter. The movement of his toes & ankles are limited & any movement causes a certain amount of pain . The feet are in a constant state of perspiration. The extensor aspect of left leg is numb & the leg feels like "wood" up to the knee-

His gait is exceedingly bad & he cant walk without assist-

-ance

on account of the pain in his left foot.
His heart dullness is at the nipple line. The Sounds are good.
Vessel walls normal. Urine normal.

III. GANGRENE.

The condition of symmetrical gangrene is not so common as syncope or asphyxia & when it does occur it usually follows on one or both.

The parts affected are the same. Raynaud never saw any cases where the nose & ears were gangrenous but many have been described since. The gangrene is of the dry type & may be very limited. It may begin in many ways. The commonest perhaps is the formation of small bullae under the skin with separation of a sequestrum of skin, this gradually extending deeper & spreading & on the other hand the whole part may become black with a well marked line of demarcation. In one or two cases at present under observation the skin on the pulp of all the fingers is cracking & peeling off leaving a dark congested surface exposed.

The following case of which a photo is shown is interesting & from the history I think is one of Raynaud's gangrene, though not symmetrical.

CASE VII. with photo.

A.F. a moulder aet 47 was admitted with gangrene of left great toe.

HISTORY

He has always suffered from cold hands & feet & when a boy, had, in cold weather, to run to the fire to warm his fingers & toes which he said went quite white. At the age of 18 he became a very heavy drinker - mostly beer- & continued so until 37. At that age he came to the infirmary with gangrene of the fingers of the right hand. He says that before they got black

the "circulation" was very bad in both hands. When in hospital the whole of the little finger, & the last two phalanges of the other three & the last phalanx of the thumb sloughed were helped away. The other hand shewed no sign of gangrene but was always cold. Six weeks after leaving the hospital he had an attack of hemiplegia which came on quite suddenly when he was dressing. He was unconscious for some time & lost the use of his left side for three weeks; but never lost the coldness of the extremeties. At this time he was much more temperate & now he has been a teetotaler for 7 years. Eighteen months ago the toes of both feet became very hot & throbbing & afterwards became permanently cold & a year ago he was re-admitted as the great toes of his left foot had become gangrenous. He was in for two months & during that time the toe sloughed off at the meta-tarso-phalangeal joint. The other toes were unaffected by gangrene but were very cold & numb he had to have hot bottles constantly, the pain in them was very severe & he had at times to have morphia . At present he is much in the same condition. The coldness is still present. The toes are very sensitive & great pain is experienced when they are touched. His eyes are prominent but not markedly so. The thyroid is not enlarged.
His heart is enlarged slightly & the sounds are very feeble. Pulse tension very low. No thickening of the vessel walls.

Having described shortly the three classical forms of Raynauds disease I will now touch shortly on some interesting conditions which we have noticed in some of the cases which have been under observation with Raynaud's phenomena.

ALIMENTARY SYSTEM.

The ingestion of food has never perhaps been associated with Raynaud's disease but in one case under observation, the

patient, a woman, came to the out-patient department complaining that when she took food her hands & feet went as cold as death. Pains in the region of the stomach after food are often complained of. They may be mistaken for ordinary gastric pains but differ from them in not being relieved by stomachic medicines & in never being associated with anaemia. They are probably of vasomotor origin. These pains were very marked in case III.

HAEMOPOIETIC SYSTEM.

The condition of the thyroid gland, as first described by Dr. Mantle of Halifax, in a lecture to the Leeds Medical Society is very interesting.

In a fair proportion of the cases under Dr. Mantle of this Infirmary the gland was distinctly enlarged, though not as a rule so much as in exophthalmic goitre. The patients first noticed the increase in the size of their necks from the fact that their collars etc got too tight for them & they could not get them on. This enlargement is nearly always associated with proptosis & some of the cases here have been photographed. I am indebted to Dr. Mantle for them as also for the use of the cases for this paper.

One of the most interesting cases which we have had here was the following in which the Raynauds symptoms followed the removal of ½ of the thyroid gland for exophthalmic goitre.

CASE IX

E.R. aged 43 married. Has had seven children. The Patient had a slight enlargement of the thyroid 18 years ago which increased with each pregnancy. Her last child was born 3 years ago & it died after 9 months illness. She had a great deal of anxiety & was "bothered" both before, & very much, after the child died. Soon after this, one of her other children got ill & she never seemed to be free from trouble. At this time she got very

severe palpitation & she noticed that her eyes were becoming very prominent. She lost her voice for 14 days & as she had great difficulty in breathing on account of the swelling in her neck she came here for operation & the left lobe of the gland was removed. She was very much improved for 3 months. Her eyes were not so prominent her palpitation was almost gone. During the next three months she felt to have no strength & her hands & feet became affected, first going white then blue. This happened whenever she was exposed to cold & she had to stop washing in cold water.

In June she said her circulation was better but the palpitation became troublesome & she had two fits one after the other. She never became unconscious only cried out.
During the fortnight previous to her present admission the attacks of syncope & asphyxia were very frequent.

Nose & ears have also become affected.

FAMILY HISTORY

One sister younger than patient is subject to epileptic seizures. Another sister has very marked Raynauds disease & in the mornings after washing she is quite unable to dress herself.

PRESENT CONDITION.

Patient is suffering mainly from local asphyxia, the syncopal attacks being very short. The skin over the finger pulps is cracked peeling leaving a dark surface exposed, the appearance left resembling that of a worker in some dye. Her joints are all enlarged & stiff. Her nails are very small & thin; no larger than a threepenny piece & turn up at the points.

Exopthalmos is gone but she suffers from palpitation at night in bed.

Heart is not enlarged. Soft systolic bruit at apex.. Pulse tension is low - Vessels are normal - Urine normal. Catamenia regular. Has had Menorrhagia .

She is always ailing. One thing to-day something else to-morrow.

BLOOD CHANGES.

There is no marked anaemia, tho there are some interesting changes in the blood. Colman Taylor published a case of a girl aged 10 whose blood was examined during an attack of syncope. The liquor sanguinis was coloured. Some of the red blood corpuscles were shrivelled, others normal but colourless. The white corpuscles were normal. Blood plates were absent. Haemorrhages of various kinds are met with, epistaxis perhaps being the commonest & it has been a feature of some of our cases.

CIRCULATORY SYSTEM.

The tension of the pulse is as a rule low & during an attack the radial pulse may become much weaker & may in some cases become almost imperceptible. The vessel walls are usually soft. Barlow says that where the disease has lasted for some time the vessel walls may become the seat of endarteritis obliterans.

Valvular lesions are often met with but they are rather to be looked upon as coincidences or they may cause the condition. Attacks of palpitation are very common especially among the female patients.

INTEGUMENTARY SYSTEM.

Scleroderma is frequently associated with Raynaud's disease & we have at present under observation a girl who has had very severe attacks of cold hands & feet since November. About January she said that the skin of both cheeks under the eyes became thick & hard & came off in large scales. The skin over the rest of her body got very dry & peeled.

On admission she had a patch of scleroderma under each eye, & the skin all over her body, though not markedly thick, was exfoliating. Her fingers & toes were very cold & when exposed got very congested & painful. The Heart & blood vessels are normal. Under tonic treatment combined with suprarenal extract her general condition improved very much, the attacks being less frequent & did not last so long. The scleroderma was still noticeable when she was discharged

PIGMENTATIONS Mottlings of the skin have been reported as frequent but the only case in which we noticed any pigmentation was in case VII. but there I think the pigmentation was due to arsenic.

Subcutaneous haemorrhages are often met with & in one case here which had been under observation for some months for general vasomotor disturbances, there were very extensive purpuric haemorrhages on both buttocks & all over abdomen.

CHANGES IN THE NAILS.

The changes in the nails are much the same as those reported by Grainger Stewart & Gibson as occurring in exophthalmic goitre. There is a distinct loss of vitality,

the nails becoming thin & tending to crack easily.

SWEATINGS.

Local sweatings are common, especially in the feet during an asphyxial attack. I have seen large beads of sweat on the feet during an attack while the skin on the rest of the body was quite dry.
General sweatings are not so common & only in one case have we seen them here. (Case no. III.)

NERVOUS SYSTEM.

Epilepsy was reported by Raynaud in his thesis as occurring in two of his cases & Munro says that 5% of the cases develope epilepsy. This bears out with our observations here. Six of our cases here have been subject to epileptic convulsions at one time or another & the frequency with which the two conditions are associated makes one more & more consider the possibility that epilepsy may have some vasomotor origin. In one case the mother noticed, when rubbing her daughter during the fit, that her feet & legs were white & cold. In another case the patient noticed that her hands & feet were very cold for about 12 hours before the fit came on & she regarded this condition as an aura. Another case of a girl with Raynaud's symptoms & epileptic convulsions was very interesting from the fact that in addition she was subject to severe attacks of epistaxis as often as once a day during the fortnight previous to admission & at least once a week for two years before that. She had also very prominent eyes & some enlargement of the thyroid having had to increase the size of her collar from

13½ inches to 15.

OCULAR SYMPTOMS.

Raynaud in his thesis mentioned & published later some cases which shewed that during the attack there is a paroxysmal impairment of vision & on examination of the eyes there is a distinct contraction of the retinal arteries with pulsation of the veins. This impairment of vision was seen in the case of the cooper already alluded to.

PROPTOSIS.

Dr. Mantle was the first to associate this condition with Raynaud's disease in the lecture already referred to.

This condition taken with the enlargement of the thyroid gland & the changes in the nails make it appear as if there was some connection between this disease & exophthalmic goitre. Many of the cases exhibiting this condition came to the eye department. After excluding eye conditions such as myopia the next question asked was "What is your circulation like". The usual answer was "Very bad, my hands & feet are always going cold".

Some of the photographs which accompany this shew this condition.

MIGRAINE is a common occurrence in Raynauds disease.

The relation of Raynaud's disease to insanity has not been made out. In one case here we found severe Raynauds symptoms in a man who had all the symptoms of General Paralysis.

URINARY SYSTEM.

Paroxysmal haemoglobinuria is sometimes met with & as Raynaud's disease & this condition are paroxysmal & brought on by exposure to cold it is easy to see how they can be connected.

The two conditions may be intermittent, one being more marked at one time, the other at another. The urine is as a rule dark & chocolate coloured & gives the usual reaction with guaiac resin & ether. Under the microscope the red corpuscles are found broken up & only the stroma is recognisable.

E X.

We had a woman here who came complaining that she was passing very high coloured urine. On investigation nothing could be found to account for the blood which was revealed by the guaiac test. The heart & kidneys were unaffected tho her blood tension was high.

She complained that since December she was subject to severe attacks of cold in the hands & feet & this was especially so at night.

The haemoglobinuria & coldness were simultaneous & both commenced after some domestic worry & lasted a month. The urine was examined microscopically & was found to contain broken down red corpuscles.

REPRODUCTIVE SYSTEM.

Raynaud associated disorders of this system very closely with the disease named after him.

Amenorrhoea he found in many cases & he says that "The only well marked exciting cause was suppression of the menses".

Menorrhagia & metrorrhagia have been met with.

LOCOMOTORY SYSTEM.

Rheumatism, Rheumatoid arthritis & gout have all been associated with Raynauds disease.

Locomotion is often impeded during a bad attack of asphyxia.

PATHOLOGY.

In regard to the pathology of the disease it is not my intention to say much .

Raynaud's theory that the condition was due to spasm of the small vessels, the spasm being due to some stimulation of the vasomotor centres in the spinal cord still holds the sway, tho' many others have since been put forward.

PROGNOSIS.

As regards complete cure from this condition the prognosis is generally very fair. Under treatment they certainly improve especially when kept confined in bed for a time but without care when they give up treatment they do relapse.

TREATMENT.

PROPHYLACTIC.

The patient subject to Raynauds disease must lead a healthy life & never let himself become run down. He should if possible chose some occupation where he is not subjected to sudden variations in temperature. He should wear flannels next the skin & should never wash in cold

water & should avoid undue exposure to cold. When out of doors gloves should always be worn.

MEDICINAL.

When the patient finds himself getting run down he should have some tonic such as quinine & iron & should if possible get a change of air. Much in this way may prevent an attack.

When the attacks are very severe opium is often required & great relief is obtained for a time from it.

Nitroglycerine has not the good effect one would imagine but it often relieves the severe migraine. Quinine has been highly praised on account of its action on malaria.

Here we have trusted entirely to supra-renal extract & under its influence the attacks have become much less frequent & less severe. We give it in tabloids of 5 grains 3 times daily & we have seen no ill effects from its administration although continued for a long time. It seems strange that a preparation with so powerful a haemostatic, & vasoconstrictor action as supra-renal should be efficacious but it undoubtedly raises the blood pressure & they become warmer.

Electricity has been greatly praised in the treatment of this condition but altho we gave it a very fair trial we could not satisfy oursleves that it gave any relief. The method of application was that suggested by Sir Thos. Barlow one electrode to the spine the other to the affected part in saline fluid.

LOCAL TREATMENT.

When it is tolerated by the patient massage should be gently tried. When the parts become cold & dead the application of hot cloths usually cuts the attack short.

Hot soothing applications are often of great value - such as fomentations of lead & opium etc.

When gangrene has set in the part should be kept as aseptic as possible & the sloughs helped away.

Amputation should if possible be avoided.